STEVAL-IPP001V2

Complete solution for power line communication in metering applications

Data brief

Features

- Energy consumption measured by external metering board
- Power line communication up to 28.8 kbps
- LCD display to show electrical parameters of energy consumption
- USB and RS232/IrDA connectivity
- Optional ZigBee communication capability
- Optional MEMS module support
- Expansion capability for smartcard interface
- RoHS compliant



STEVAL-IPP001V2

Description

The STEVAL-IPP001V2 demonstration board is based on the STM32F10xxx microcontroller, ST7580 PLM module and STPMC1 polyphase energy-metering IC.

The STEVAL-IPP001V2 demonstration board implements a PLM smart-meter node which allows the public utility company to monitor energy consumption and other electrical parameters during one or more phases.

The voltage, current, power, power factor, THD, active and reactive energy and other stored information can be shown on an LCD locally or sent to a PLM data concentrator through a power line communication network.

1 Schematic diagrams

Figure 1. Top

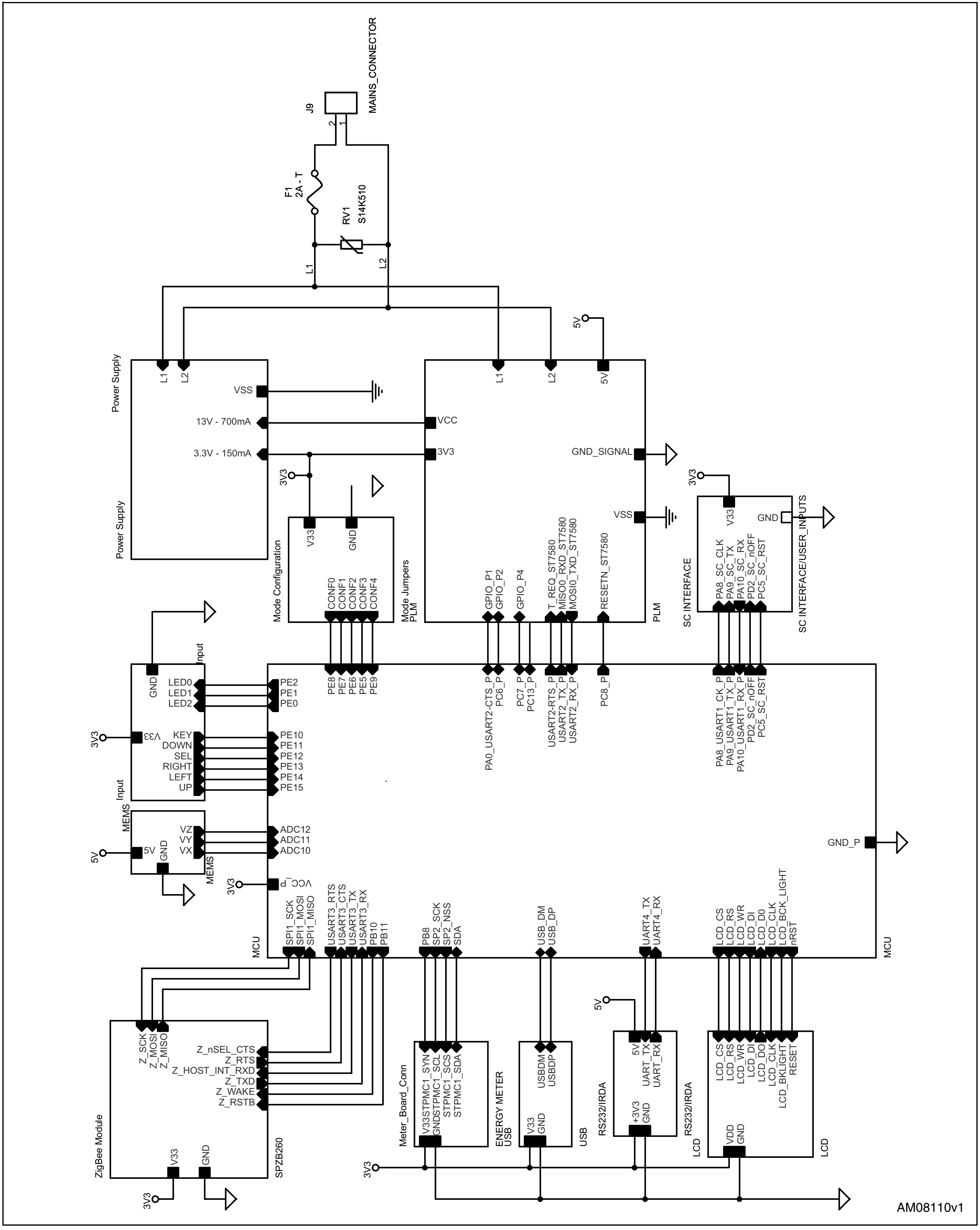


Figure 2. Metering board connector

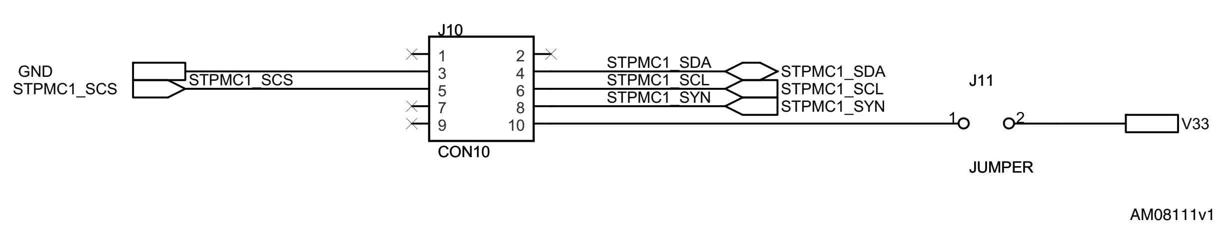


Figure 3. User interface

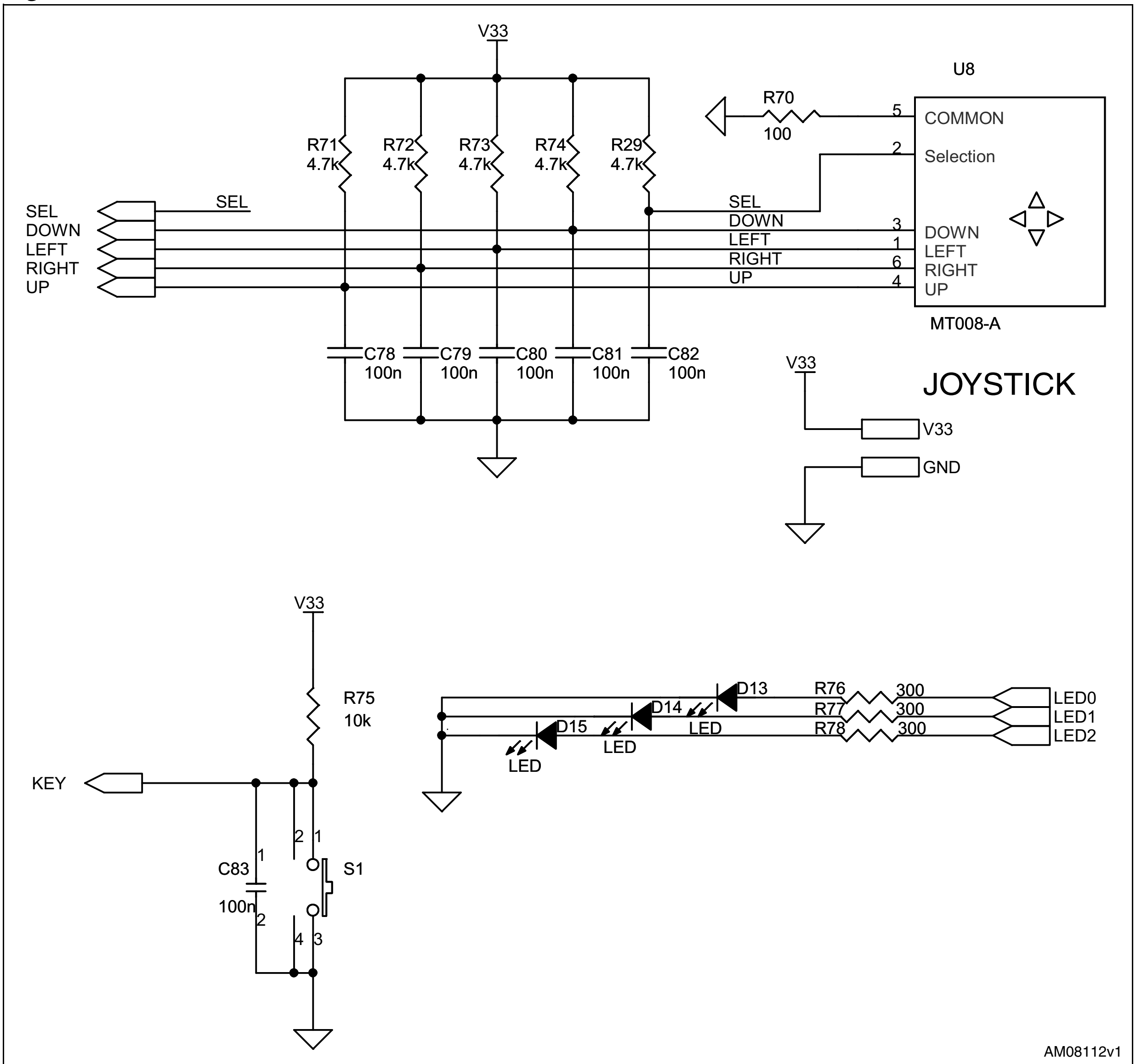


Figure 4. LCD connector section

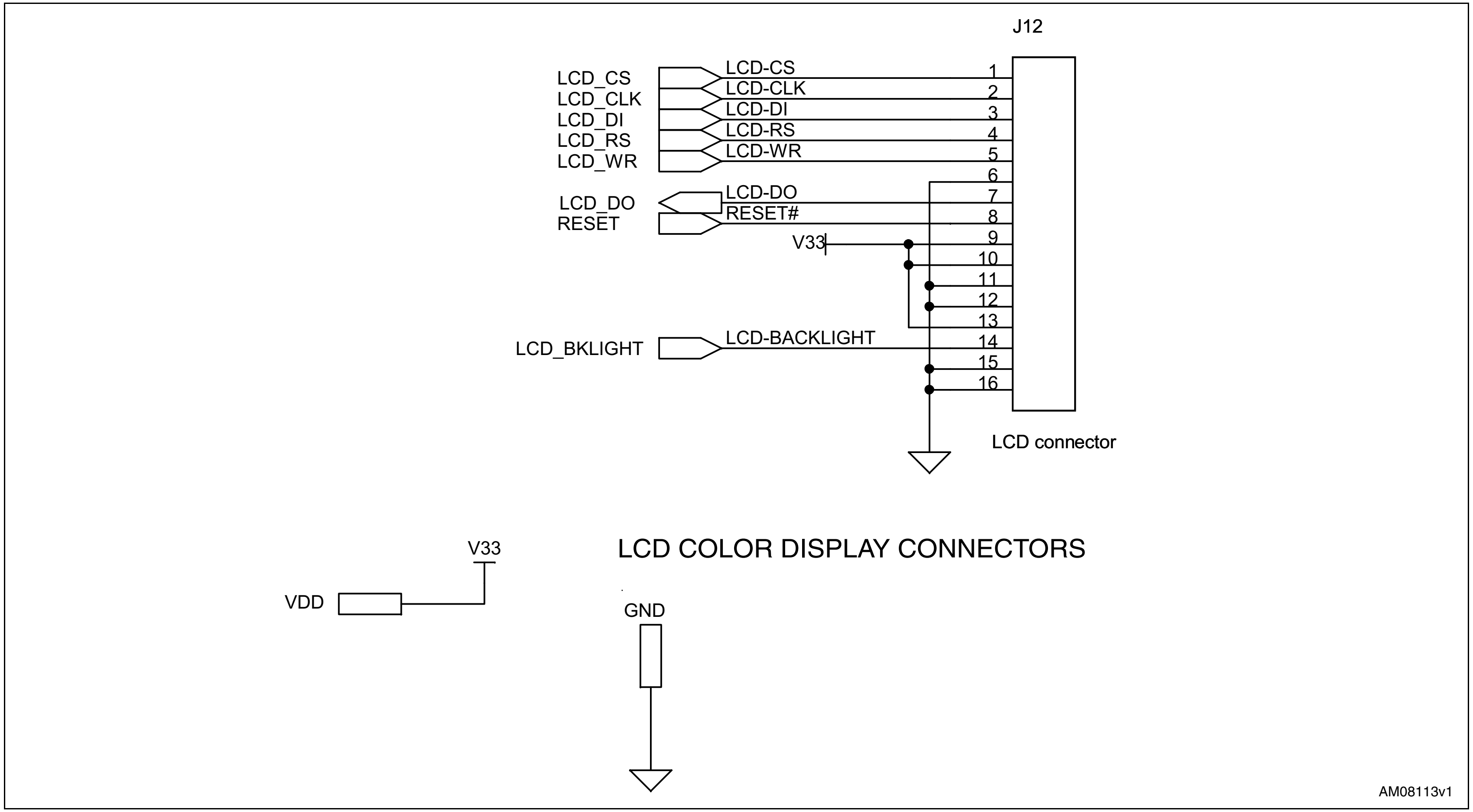


Figure 5. MCU schematic

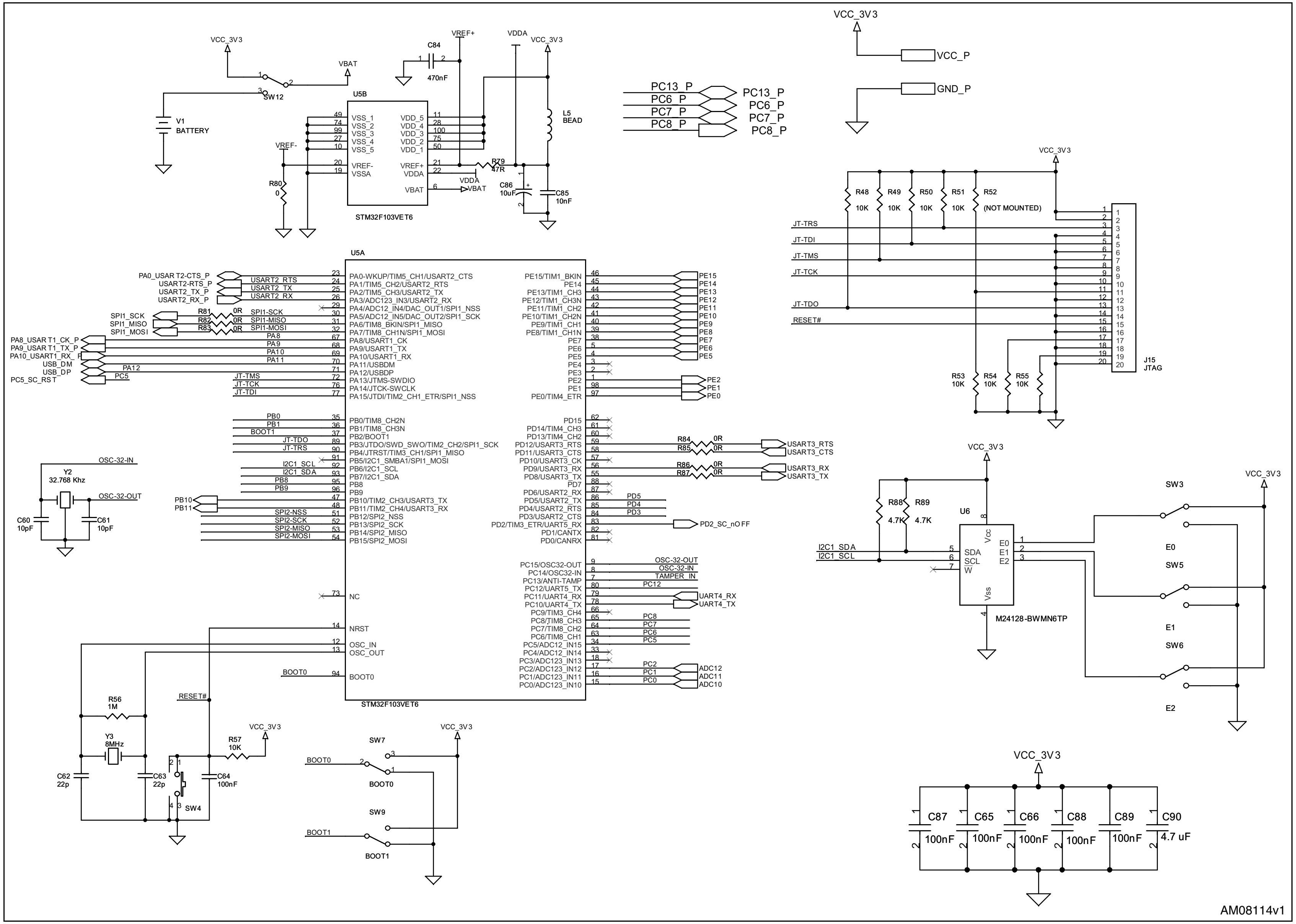


Figure 6. RTC calibration, meter and LCD level

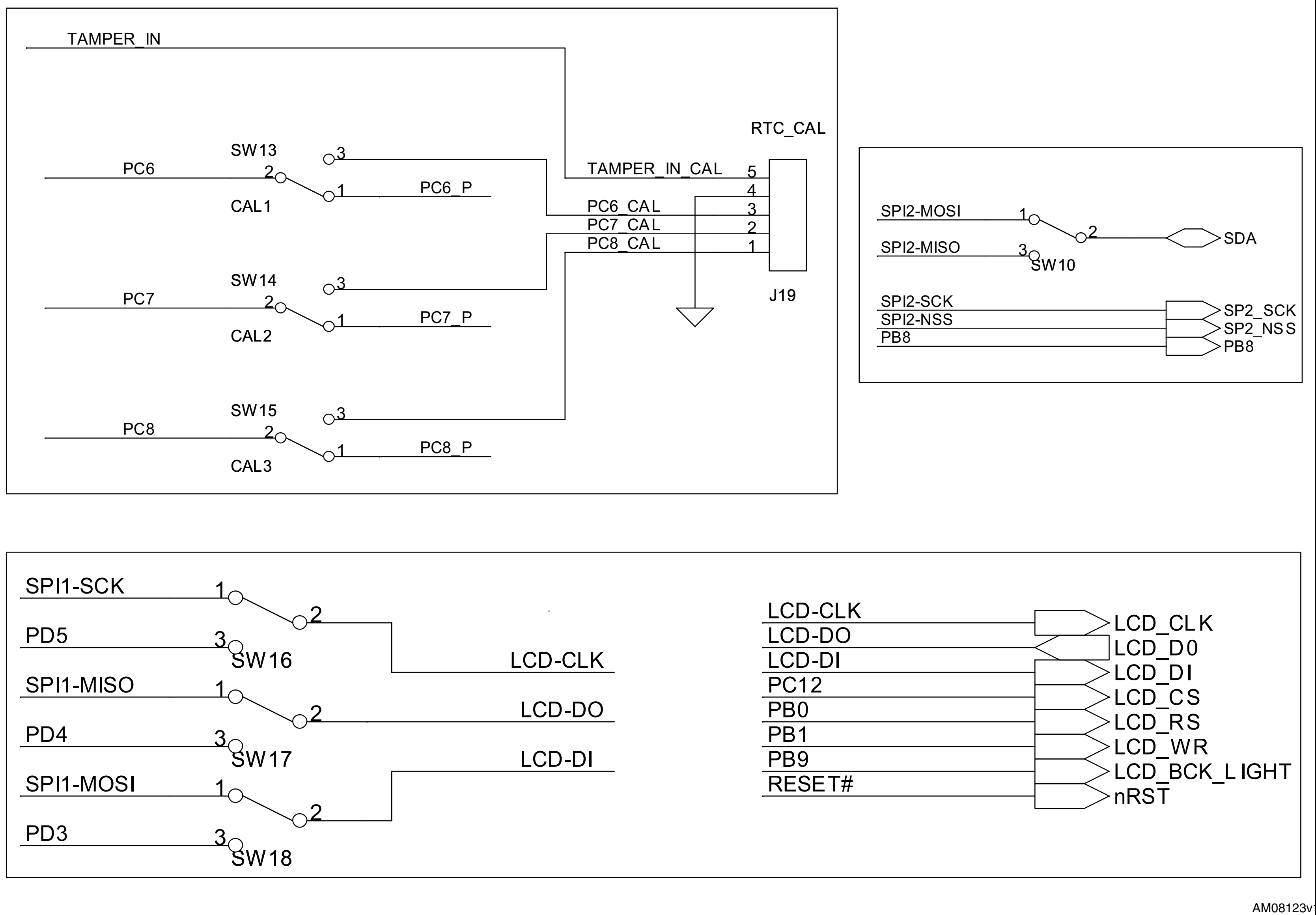


Figure 7. MEMS module connector

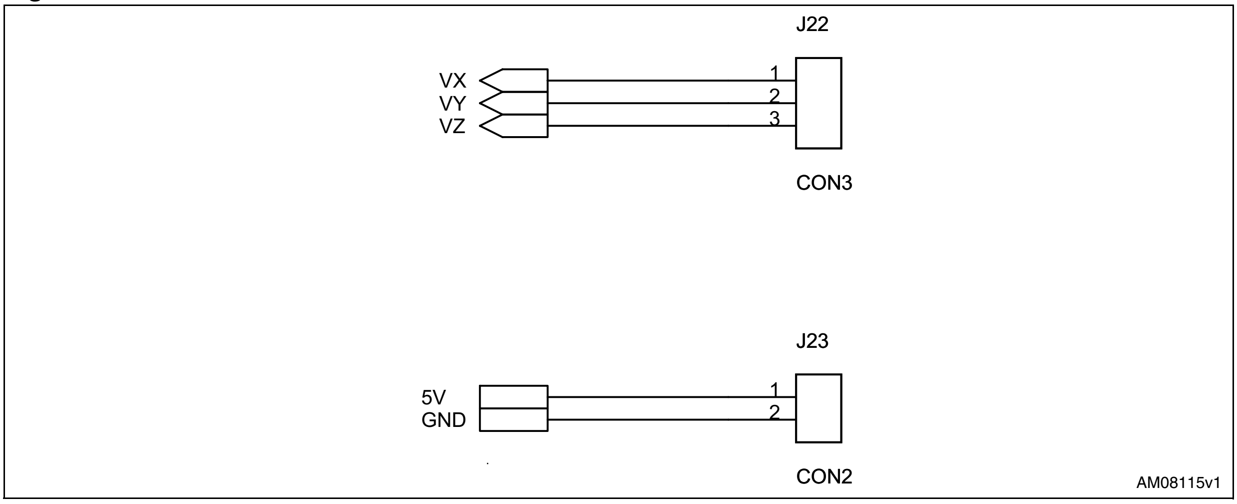


Figure 8. General purpose configuration jumpers

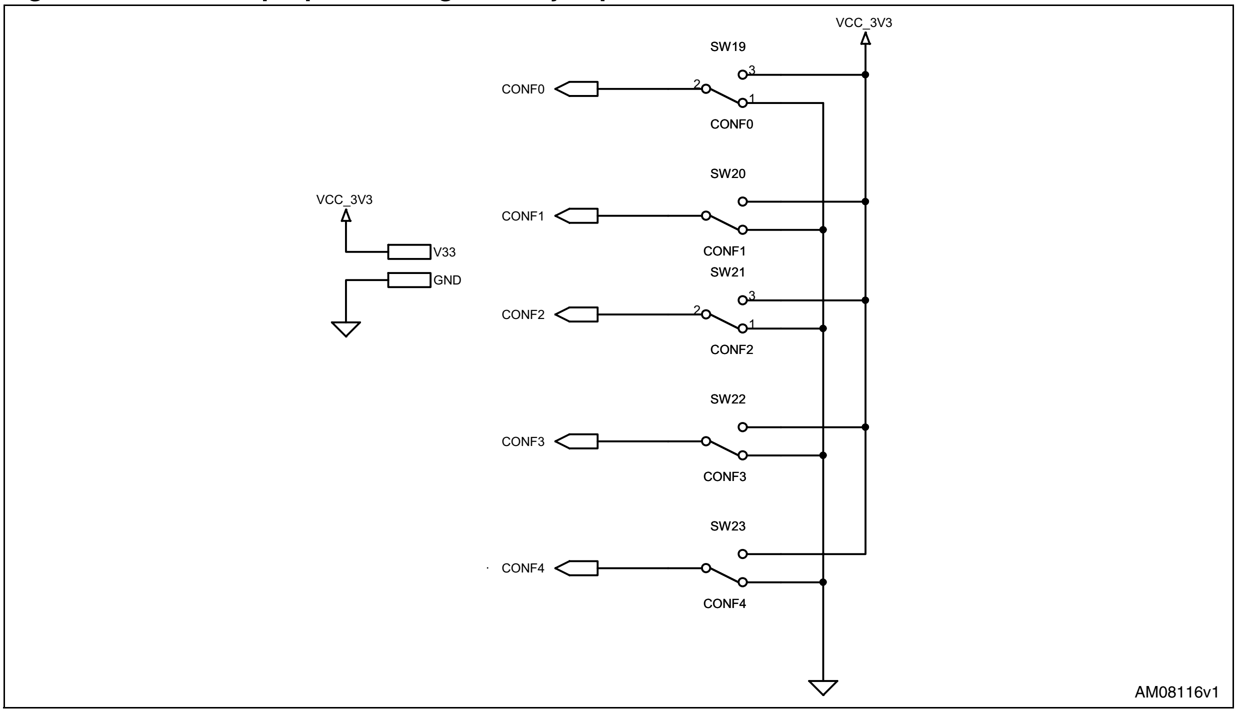


Figure 9. Power line modem

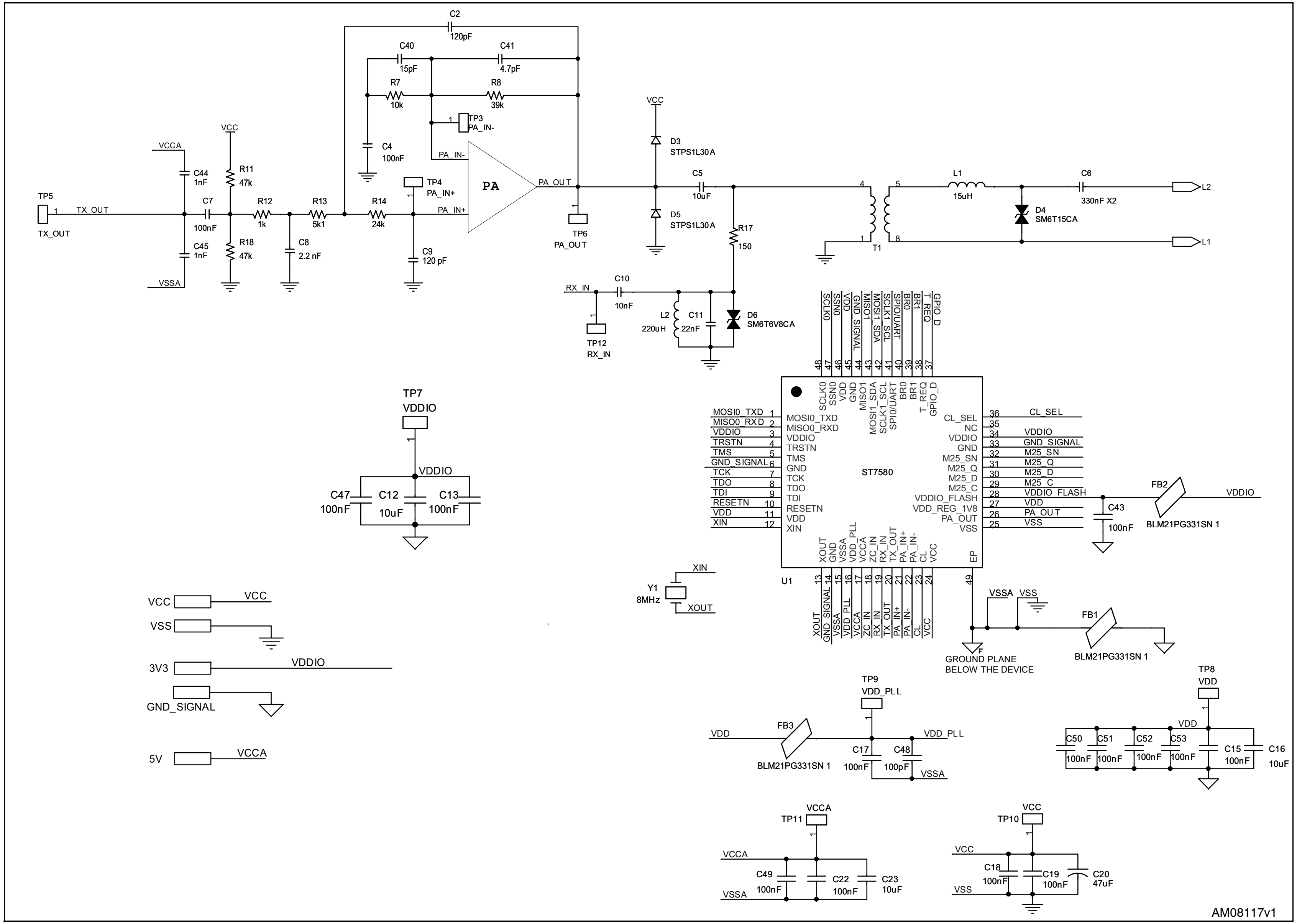


Figure 10. System JTAG connector, ST7580 UART interface, and 8051 program Flash memory

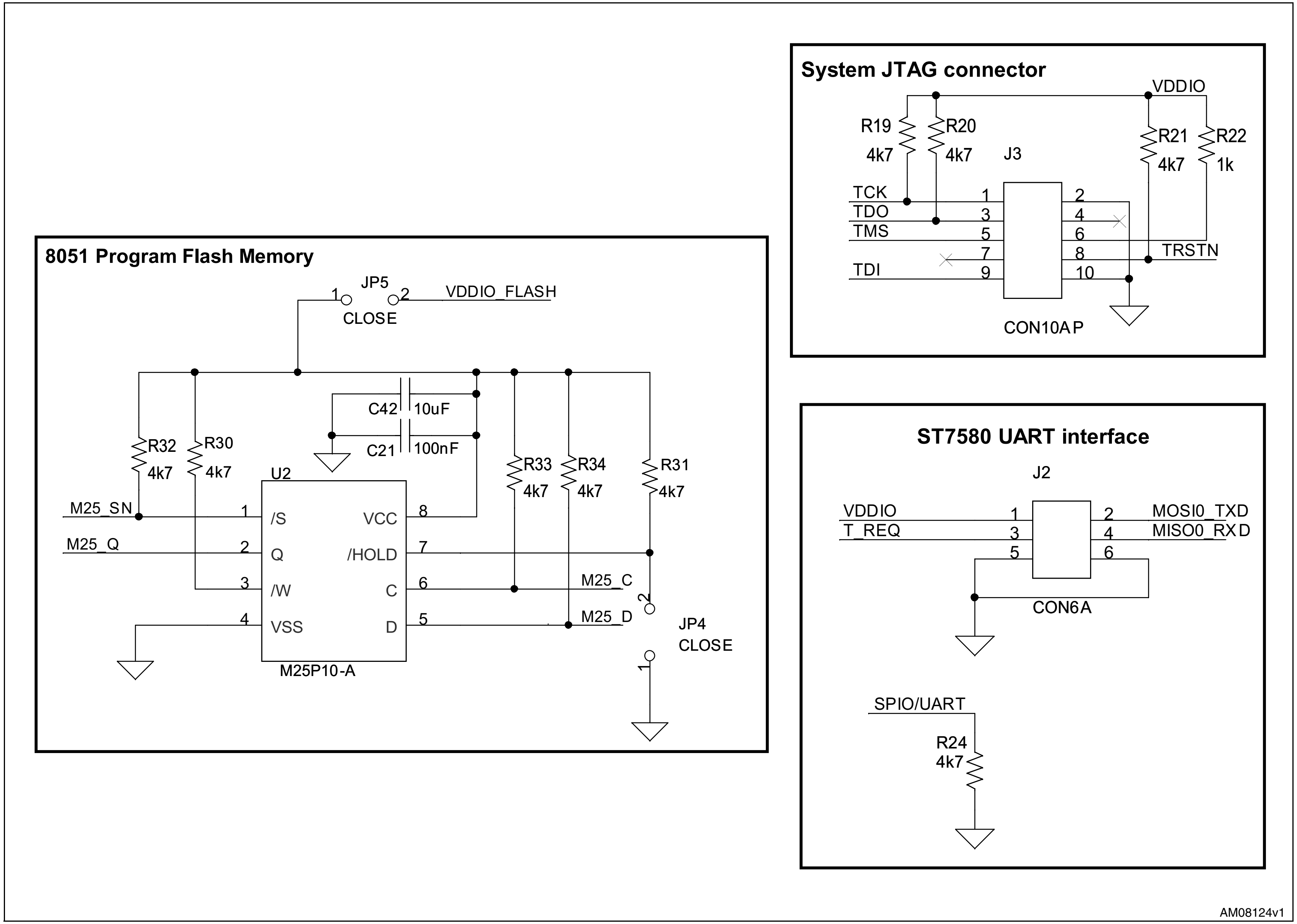


Figure 11. Non-isolated zero-crossing, ST7580 reset button, current limit setting, and microcontroller connection

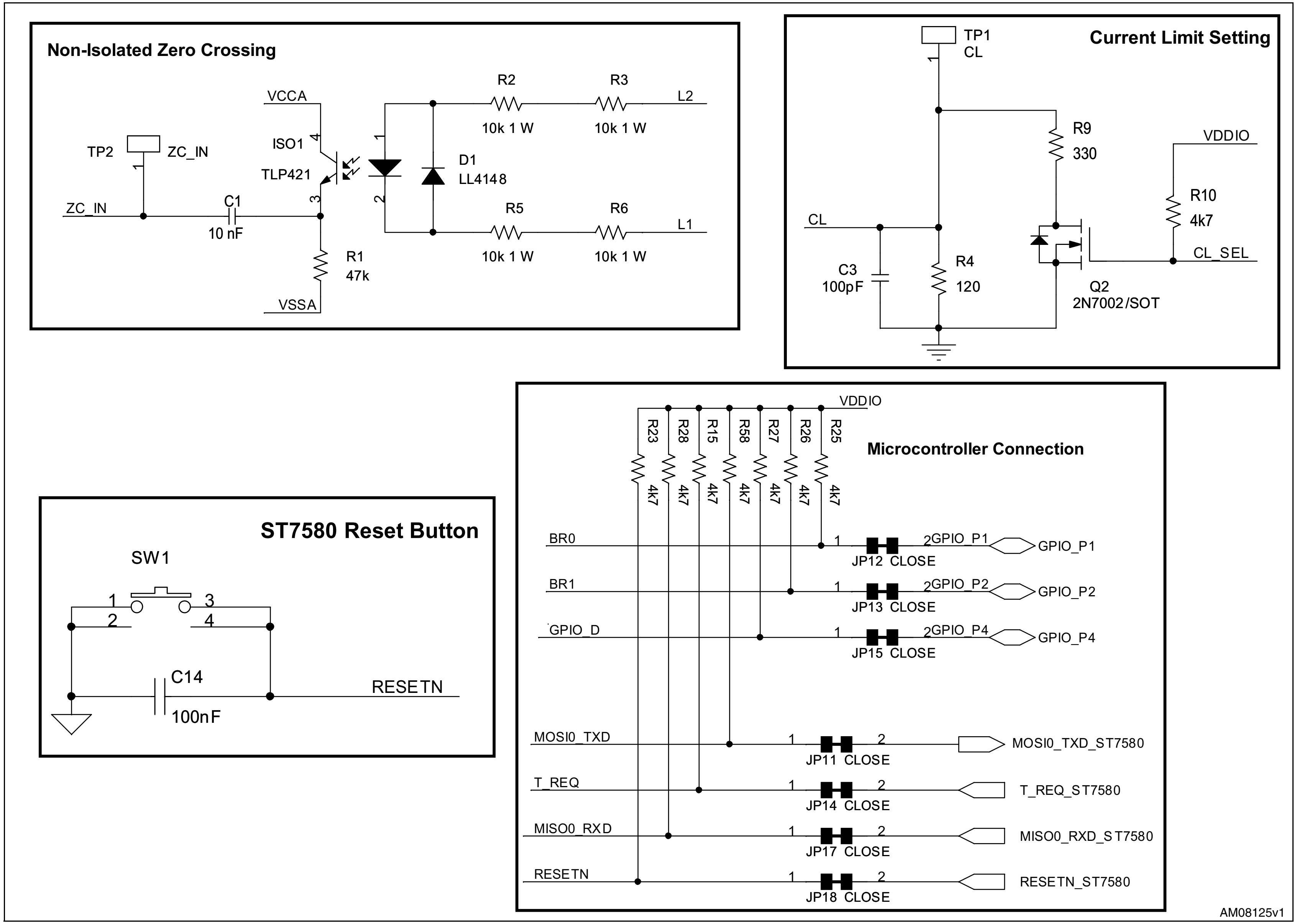


Figure 12. Power supply (part 1)

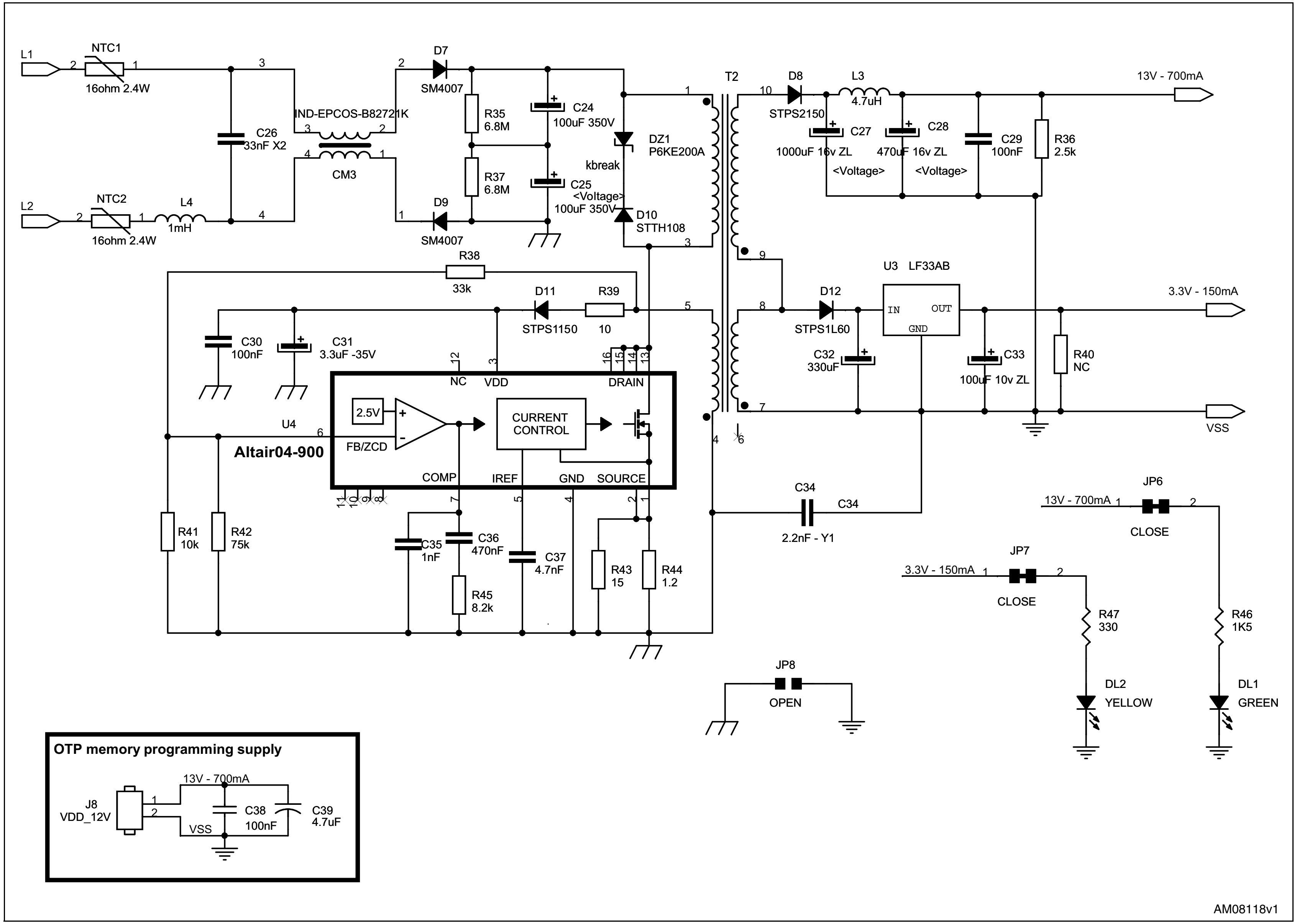


Figure 13. Power supply (part 2)

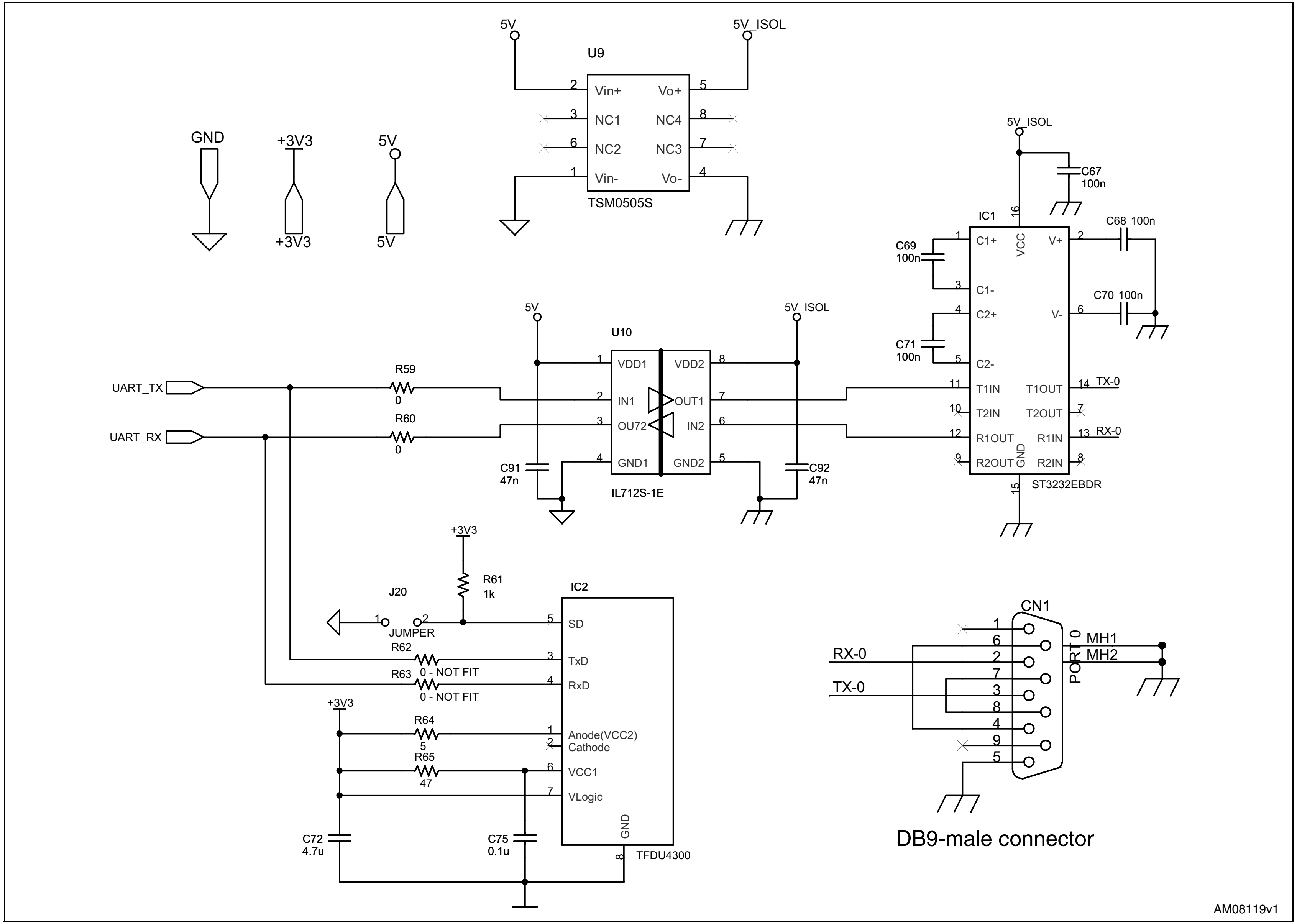


Figure 14. Power supply (part 3)

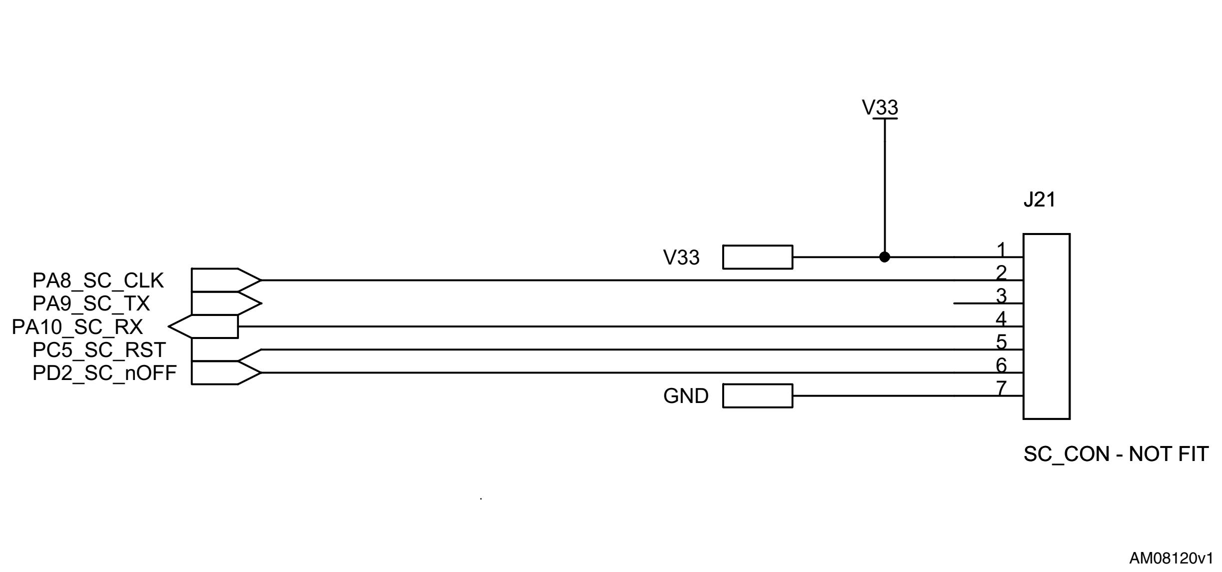


Figure 15. ZigBee module connector

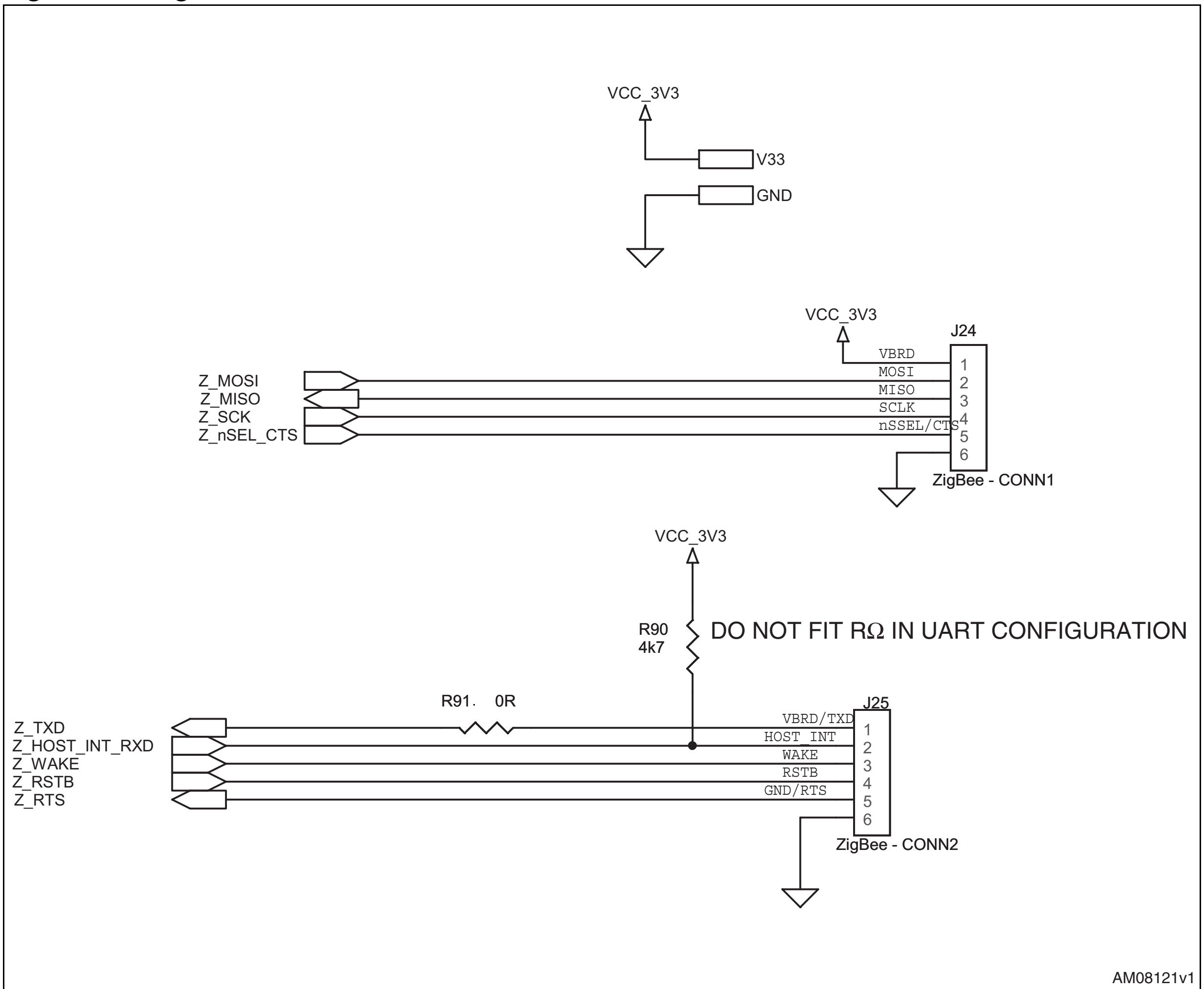
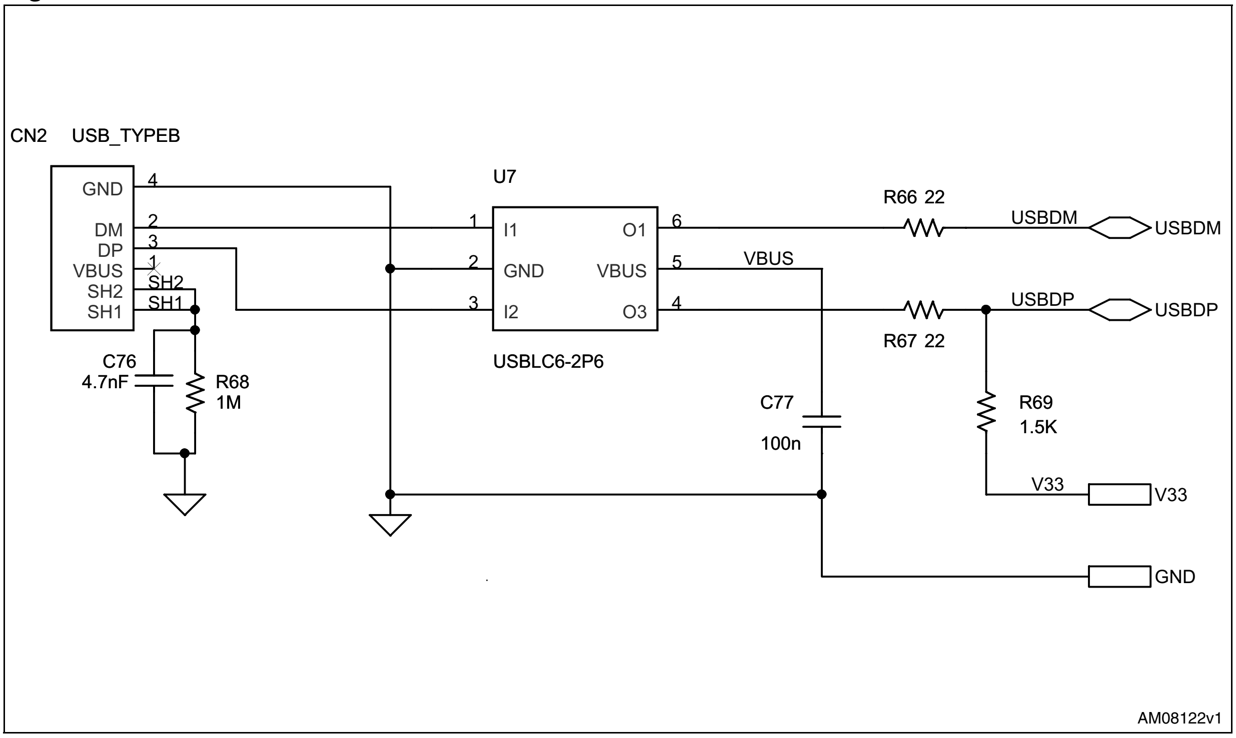


Figure 16. USB connector



2 Revision history

Table 1. Document revision history

Date	Revision	Changes
20-Oct-2011	1	Initial release.

STMicroelectronics group of companies

Australia - Belgium - Brazil - Canada - China - Czech Republic - Finland - France - Germany - Hong Kong - India - Israel - Italy - Japan - Malaysia - Malta - Morocco - Philippines - Singapore - Spain - Sweden - Switzerland - United Kingdom - United States of America

www.st.com